

### **An Approach for Faster High Field Magnet Technology Development**

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The Superconducting Magnet Program at LBNL has developed a small magnet design that facilitates rapid testing of small superconducting racetrack coils in the field range of 10-12 Tesla. Several coils have been made from a variety of Nb<sub>3</sub>Sn/Cu cables, insulated, wound, reacted, potted and assembled into a small reusable yoke and shell structure. Bladder and key technology have provided a rapid, efficient means for adjusting coil pre-stress during both initial assembly, and between thermal cycles. This affords the opportunity to test moderately long cable samples under "magnet conditions" on a time scale considerably closer to that required for traditional cable samples.

We have built and tested four coils with the initial aim of determining the feasibility of reducing overall conductor costs with "mixed-strand" cables. Details of cost reduction improvements, coil construction, magnet structure, and assembly procedures are reported, along with the relative performance of the mixed-strand coil.

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